

**WHAT IS CLAIMED IS:**

1. A subscriber optical distributor for a broadcasting-telecommunications convergence service over an FTTH (Fiber To The Home) optical transmission network, said  
5 distributor comprising:
  - an optical transceiver for receiving a TDM (Time Division Multiplex) broadcasting-telecommunications optical signal, converting the optical signal to an electrical signal, and converting an uplink electrical signal received from a subscriber to an optical signal;
  - 10 a broadcasting/telecommunications signal distributor for receiving the electrical broadcasting-telecommunications signal and for separating the received electrical signal into a broadcasting signal and a telecommunications signal for further distribution;
  - a broadcasting interface for interfacing with the broadcasting signal received from the broadcasting/telecommunications signal distributor; and
  - 15 a telecommunications interface for interfacing with the telecommunications signal received from the broadcasting/telecommunications signal distributor, and providing the uplink signal to the optical transceiver.
2. The subscriber optical distributor of claim 1, further comprising a  
20 broadcasting controller for receiving channel selection information regarding the subscriber from the broadcasting interface, and providing the channel selection information to the broadcasting/telecommunications signal distributor, so that only broadcasting data for a

selected channel is output.

3. The subscriber optical distributor of claim 1, wherein the optical transceiver is implemented as a VCSEL (Vertical Cavity Surface Emitting Laser) transceiver.

4. The subscriber optical distributor of claim 2, wherein the optical transceiver is implemented as a VCSEL (Vertical Cavity Surface Emitting Laser) transceiver.

10 5. The subscriber optical distributor of claim 3, wherein the VCSEL transceiver comprises:

an analog broadcasting receiver having a PIN-PD (Photo Diode) and an LNA (Low Noise Amplifier);

a broadcasting-telecommunications signal receiver having a PIN-PD and a transimpedance amplifier, for receiving the TDM broadcasting-telecommunications signal; and

a transmitter for an Ethernet uplink.

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6. The subscriber optical distributor of claim 4, wherein the VCSEL transceiver comprises:

an analog broadcasting receiver having a PIN-PD (Photo Diode) and an LNA (Low Noise Amplifier);

5 a broadcasting-telecommunications signal receiver having a PIN-PD and a transimpedance amplifier, for receiving the TDM broadcasting-telecommunications signal; and

a transmitter for an Ethernet uplink.

10 7. The subscriber optical distributor of claim 1, wherein the broadcasting/telecommunications signal distributor receives the broadcasting-telecommunications signal from the optical transceiver, extracts time frame data and a clock signal of TDM from the received broadcasting-telecommunications signal, and separating the time frame data into broadcasting data and Ethernet packet data.

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8. The subscriber optical distributor of claim 2, wherein the broadcasting/telecommunications signal distributor receives the broadcasting-telecommunications signal from the optical transceiver, extracts time frame data and a clock signal of TDM from the received broadcasting-telecommunications signal, and  
20 separating the time frame data into broadcasting data and Ethernet packet data.

9. The subscriber optical distributor of claim 3, wherein the broadcasting/telecommunications signal distributor receives the broadcasting-telecommunications signal from the optical transceiver, extracts time frame data and a clock signal of TDM from the received broadcasting-telecommunications signal using an  
5 internal PLL (Phase Locked Loop), and separating the time frame data into broadcasting data and Ethernet packet data.

10. A method for optical distributor to a subscriber receiving broadcasting-telecommunications convergence service over an FTTH (Fiber To The Home) optical  
10 transmission network, said method comprising:

- (a) receiving a TDM (Time Division Multiplex) broadcasting-telecommunications optical signal from an optical transceiver, converting the optical signal to an electrical signal,
- (b) receiving the electrical broadcasting-telecommunications signal that has been  
15 converted by the optical transceiver into an electrical signal;
- (c) separating the received electrical signal into a broadcasting signal and a telecommunications signal for further distribution;
- (d) interfacing the broadcasting signal with a broadcasting interface;
- (e) interfacing the telecommunications signal with the telecommunications  
20 interface, and
- (f) providing an uplink electrical signal received from a subscriber to the optical transceiver for conversion.

11. The method according to claim 10, further comprising:

(g) providing a broadcasting controller for receiving channel selection information regarding the subscriber from the broadcasting interface, and (h) providing the channel selection information to the broadcasting/telecommunications signal distributor, so that  
5 only broadcasting data for a selected channel is output.

12. The method according to claim 10, wherein the optical transceiver used in steps (b) and (f) is implemented as a VCSEL (Vertical Cavity Surface Emitting Laser) transceiver.

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13. The method according to claim 11, wherein the optical transceiver used in steps (b) and (f) is implemented as a VCSEL (Vertical Cavity Surface Emitting Laser) transceiver.

15 14. The method according to claim 12, wherein the VCSEL transceiver used in the method comprises:

an analog broadcasting receiver having a PIN-PD (Photo Diode) and an LNA (Low Noise Amplifier);

a broadcasting-telecommunications signal receiver having a PIN-PD and a  
20 transimpedance amplifier, for receiving the TDM broadcasting-telecommunications signal; and

a transmitter for an Ethernet uplink.

15. The method according to claim 13, wherein the VCSEL transceiver used in the method comprises:

an analog broadcasting receiver having a PIN-PD (Photo Diode) and an LNA (Low Noise Amplifier);

5 a broadcasting-telecommunications signal receiver having a PIN-PD and a transimpedance amplifier for receiving the TDM broadcasting-telecommunications signal; and

a transmitter for an Ethernet uplink.

10 16. The method according to claim 10, wherein the broadcasting/telecommunications signal distributor receives the broadcasting-telecommunications signal from the optical transceiver, extracts time frame data and a clock signal of TDM from the received broadcasting-telecommunications signal, and separates the time frame data into broadcasting data and Ethernet packet data.

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17. The method according to claim 11, wherein the broadcasting/telecommunications signal distributor receives the broadcasting-telecommunications signal from the optical transceiver, extracts time frame data and a clock signal of TDM from the received broadcasting-telecommunications signal, and  
20 separates the time frame data into broadcasting data and Ethernet packet data.

18. The method according to claim 12, wherein the  
broadcasting/telecommunications signal distributor receives the broadcasting-  
telecommunications signal from the optical transceiver, extracts time frame data and a  
clock signal of TDM from the received broadcasting-telecommunications signal using an  
5 internal PLL (Phase Locked Loop), and separating the time frame data into broadcasting  
data and Ethernet packet data.

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